

APPENDIX F

Rainfall Analysis

A goal of the Lower West Coast Water Supply Plan (LWC Plan) is to identify areas of potential water supply shortfalls and sufficient supply sources to meet the 1-in-10 year demand needs occurring over a 20-year planning horizon. Rainfall is responsible for nearly all surface water inflows and outflows in the LWC Planning Area, and is an important source of recharge to the Surficial Aquifer System, the Lower Tamiami Aquifer System and the Sandstone Aquifer System. As such, an understanding of the climatic conditions is an essential part of predicting the availability of certain water resources. Rainfall is also the single most important factor controlling the occurrence of water shortages in the planning region.

RAINFALL DISTRIBUTION

Rainfall varies from county to county within the Lower West Coast (LWC) Planning Area. Nine rainfall stations distributed throughout the planning area were used to assess mean rainfall conditions (**Figure 1**). The District chose these stations as they have a minimum of 36 years of reliable records. **Table 1** presents a summary of the data and lists the period of record for each station along with the database keys (DBKEYs) used to retrieve the data from the District's DBHYDRO database. Abtew and Ali (1999) performed the most recent Districtwide analysis of rainfall distribution.

The mean annual rainfall for the LWC Planning Area is 53 inches. **Figure 2** presents the mean monthly distribution of rainfall at the nine rainfall stations and **Table 2** lists the average monthly rainfall values. The wet period begins on June 1 and ends on October 31, with the heaviest rainfall usually occurring from June through August. The dry period begins on November 1 and ends on May 31. December is usually the month with the lowest rainfall.

RAINFALL DATA PREPARATION

The District has a network of rainfall stations that provide historical rainfall data. Long-term data were obtained from nine rainfall stations with relatively long and reliable records. These data are maintained in the DBHYDRO database. **Table 1** lists the DBKEY values for these stations, as well as the period of record for each rainfall station. **Table 3** through **Table 11** present the monthly rainfall for each rainfall station during the entire period of record. **Figure 3** shows the statistical 1-in-10 year drought event plots for the rainfall stations in the LWC Planning Area and **Table 12** lists the values for 1-in-10 year drought events. In some instances, not every daily value was available for each station location. In these occurrences, the inverse distance squared method was used to fill in daily missing values in each data set before calculating monthly averages.



Figure 1. Rainfall Stations in the LWC Planning Area.

Table 1. Average Rainfall Data for Rainfall Stations in the LWC Planning Area.

County	Rainfall Station	Average Annual Rainfall	Period of Record ^a		Maximum Monthly Rainfall		Minimum Monthly Rainfall		% Rain Falling in Wet Season	Primary DBKEY ^b
			Number of Years	Years	inches	month	inches	month		
Charlotte	Punta Gorda	49.94	36	1965-2000	8.81	Jun.	1.72	Apr.	68%	PT376 - PT379
Collier	Everglades	55.29	36	1965-2000	10.89	Jun.	1.44	Dec.	73%	PT210, PT211
	Immokalee	53.21	36	1965-2000	9.25	Jun.	1.74	Dec.	66%	PT260, PT261
	Naples	53.34	36	1965-2000	8.61	Jun.	1.49	Dec.	70%	PT331, PT333
Glades	Moore Haven	48.37	36	1965-2000	7.84	Jun.	1.56	Dec.	65%	PT322, PT323
Hendry	Clewiston	49.45	36	1965-2000	8.07	Jun.	1.48	Dec.	64%	PT185, PT186
	Devils Garden	54.04	36	1965-2000	9.54	Jun.	1.53	Dec.	66%	PT201, PT202
	LaBelle	57.77	36	1965-2000	10.25	Jun.	1.67	Dec.	67%	PT287, PT288
Lee	Fort Myers	55.65	36	1965-2000	9.81	Jun.	1.62	Dec.	70%	PT236 - PT238
Overall Average		53.01			9.23		1.58			

a. Period of Record.

b. For those interested in accessing DBHYDRO. Missing daily data replaced by weighted averages of neighboring stations.

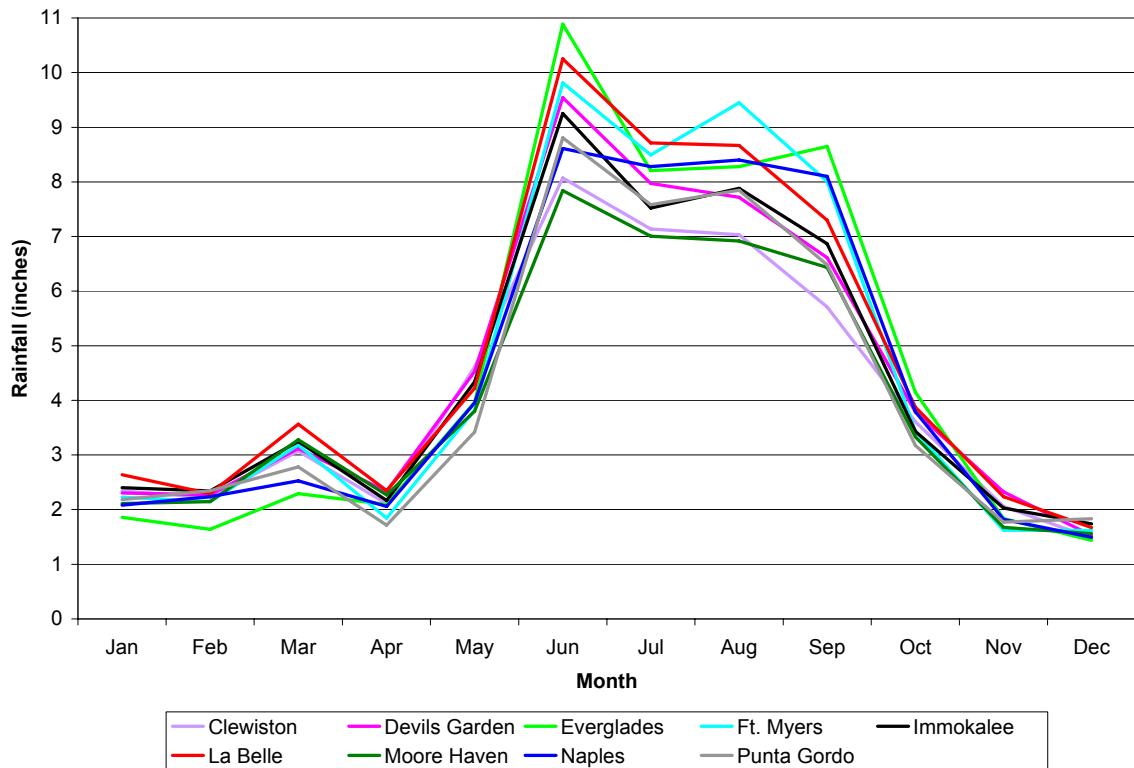


Figure 2. Mean Monthly Distribution of Rainfall at Stations in the LWC Planning Area.

Table 2. Average Rainfall (in inches) for Rainfall Stations in the LWC Planning Area.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Clewiston	2.34	2.22	3.07	2.11	4.61	8.07	7.14	7.03	5.71	3.61	2.06	1.48	49.45
Devils Garden	2.30	2.27	3.12	2.33	4.53	9.54	7.97	7.72	6.61	3.79	2.33	1.53	54.04
Everglades	1.86	1.64	2.29	2.09	3.97	10.89	8.21	8.28	8.65	4.15	1.84	1.44	55.29
Ft. Myers	2.23	2.15	3.18	1.84	3.82	9.81	8.49	9.45	8.01	3.43	1.62	1.62	55.65
Immokalee	2.40	2.34	3.25	2.17	4.34	9.25	7.52	7.88	6.87	3.43	2.03	1.74	53.21
LaBelle	2.64	2.29	3.56	2.35	4.22	10.25	8.71	8.67	7.30	3.88	2.23	1.67	57.77
Moore Haven	2.11	2.14	3.28	2.27	3.80	7.84	7.00	6.92	6.43	3.33	1.68	1.56	48.37
Naples	2.08	2.24	2.52	2.06	3.96	8.61	8.28	8.40	8.10	3.79	1.82	1.49	53.34
Punta Gorda	2.18	2.34	2.78	1.72	3.42	8.81	7.58	7.85	6.48	3.17	1.77	1.83	49.94
Average	2.24	2.18	3.01	2.10	4.07	9.23	7.88	8.02	7.13	3.62	1.93	1.59	53.01

Table 3. Monthly and Mean Rainfall (inches) at Punta Gorda Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.71	3.16	1.44	4.96	1.44	8.05	6.33	7.32	3.47	5.14	0.30	1.06	43.39
1966	5.18	3.50	0.64	4.30	4.53	14.79	3.09	6.95	6.67	3.28	0.24	1.01	54.18
1967	0.70	2.67	0.15	0.00	0.54	8.91	7.97	12.45	3.99	4.11	1.01	4.49	46.99
1968	0.11	1.88	0.50	0.58	8.24	14.66	9.68	8.90	5.33	2.95	4.54	0.46	57.83
1969	0.85	2.43	6.34	0.75	6.33	9.06	8.62	7.20	6.08	4.42	1.13	4.31	57.52
1970	4.86	1.41	9.26	0.09	6.52	7.78	3.86	7.96	5.24	0.79	0.30	0.69	48.76
1971	0.59	1.68	0.71	0.66	0.73	6.22	5.86	8.96	7.33	3.49	1.43	0.45	38.11
1972	0.66	2.16	3.70	0.80	7.77	8.33	5.51	10.59	3.71	2.68	4.40	2.55	52.86
1973	6.29	2.05	2.26	2.81	0.69	7.70	9.77	9.98	5.68	0.16	0.11	1.80	49.30
1974	0.10	0.18	0.43	0.63	2.49	23.99	7.89	9.92	4.63	0.56	0.68	2.34	53.84
1975	0.21	0.66	0.68	0.00	2.77	4.21	8.19	5.64	9.24	6.93	0.18	1.06	39.77
1976	0.30	1.33	0.53	0.63	5.79	8.38	5.14	3.36	5.94	2.26	1.83	1.38	36.87
1977	2.44	1.15	0.39	0.52	6.03	3.48	8.36	8.39	10.01	2.48	2.08	4.92	50.25
1978	3.06	3.78	2.76	0.30	5.46	8.92	8.19	3.82	1.23	1.97	3.42	3.45	46.36
1979	7.07	0.99	1.17	2.13	7.34	2.00	3.82	9.60	14.03	0.63	0.80	3.45	53.03
1980	2.66	1.11	2.99	2.07	2.88	6.41	9.13	9.33	6.96	2.63	2.96	0.84	49.97
1981	0.73	3.17	0.63	0.00	1.51	7.60	10.53	13.02	4.16	0.10	2.86	0.25	44.56
1982	1.45	5.61	4.72	1.67	1.59	7.45	13.15	7.60	10.07	3.33	1.89	0.36	58.89
1983	3.75	11.05	6.14	2.95	0.87	7.04	6.18	6.74	9.69	4.15	3.27	2.60	64.43
1984	0.58	3.31	5.35	3.22	3.74	6.89	10.79	3.50	6.99	2.18	1.04	2.15	49.74
1985	0.66	1.11	1.25	1.68	1.16	4.35	12.14	7.49	6.49	4.05	2.59	0.51	43.48
1986	1.44	0.73	5.42	0.47	2.96	11.26	6.00	9.02	3.74	5.77	0.90	4.00	51.71
1987	2.31	2.44	8.18	0.11	3.78	7.89	5.87	6.68	3.44	6.25	5.07	0.59	52.61
1988	2.48	2.02	4.21	2.11	1.27	8.28	8.48	8.41	7.92	1.80	3.25	1.80	52.03
1989	2.25	0.80	1.95	2.05	1.05	5.89	7.26	8.26	5.69	2.13	0.23	2.83	40.39
1990	0.08	2.52	1.96	1.35	3.93	5.21	3.52	7.02	3.33	3.50	0.05	0.38	32.85
1991	5.84	1.87	3.03	1.66	9.45	8.30	7.47	4.19	3.36	1.11	1.75	0.28	48.31
1992	0.96	3.59	3.05	1.18	0.27	19.75	7.89	6.26	5.74	1.97	2.17	1.20	54.03
1993	4.34	2.96	4.04	3.46	0.78	6.72	6.30	4.55	5.10	6.23	0.09	0.64	45.21
1994	1.50	0.84	2.20	5.80	0.75	6.02	7.46	9.18	10.18	1.23	1.34	2.20	48.70
1995	2.79	2.72	1.11	3.49	1.80	17.63	14.22	15.60	7.33	10.88	2.61	0.88	81.06
1996	2.23	0.49	3.24	3.10	6.54	8.60	4.91	4.15	6.76	8.86	0.27	1.07	50.22
1997	1.43	3.14	2.21	5.15	6.32	5.36	8.28	3.41	11.85	1.14	2.78	6.47	57.54
1998	3.72	5.26	5.54	0.46	1.56	6.37	8.46	9.05	5.36	1.05	4.23	1.03	52.09
1999	2.71	0.03	1.12	0.18	3.76	16.05	6.85	7.74	6.33	3.19	1.33	1.97	51.26
2000	1.51	0.60	0.84	0.47	0.46	7.46	5.73	10.21	10.15	0.87	0.69	0.53	39.52
Mean	2.18	2.34	2.78	1.72	3.42	8.81	7.58	7.85	6.48	3.17	1.77	1.83	49.94

Table 4. Monthly and Mean Rainfall (inches) at Everglades Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.18	2.99	0.68	2.24	2.17	6.54	8.65	6.39	7.66	5.66	1.03	0.37	44.56
1966	4.06	2.09	0.46	4.81	5.01	14.06	14.19	3.38	6.63	4.20	0.17	0.18	59.23
1967	1.20	1.60	0.36	0.00	0.25	13.91	7.39	5.19	9.60	2.97	1.46	1.46	45.39
1968	1.65	3.24	1.14	0.50	6.45	16.52	6.35	8.52	14.33	9.03	1.15	0.24	69.12
1969	1.80	1.53	2.12	2.42	5.65	23.82	7.03	12.29	3.69	8.31	0.57	0.51	69.74
1970	2.37	1.24	8.05	0.00	4.26	3.59	11.61	3.93	6.18	4.79	0.43	0.02	46.46
1971	0.44	0.79	0.21	0.11	3.47	7.65	5.13	10.94	8.89	7.06	0.92	0.56	46.16
1972	1.71	3.03	6.52	2.74	5.31	16.08	4.56	11.15	11.74	1.65	5.00	1.20	70.70
1973	2.50	0.71	2.39	1.06	1.10	8.42	10.87	11.42	7.89	0.31	0.34	2.58	49.60
1974	0.35	0.00	0.00	2.27	6.79	16.31	10.52	6.22	6.26	0.11	1.02	4.15	54.00
1975	0.23	0.09	2.16	1.17	5.54	7.70	5.88	5.28	14.67	4.24	0.23	0.20	47.39
1976	0.34	1.40	1.11	3.21	6.86	7.32	6.04	5.97	5.94	4.44	0.88	2.15	45.67
1977	1.69	0.71	0.03	1.80	4.39	12.31	15.10	6.39	9.56	0.61	1.76	2.57	56.93
1978	2.17	3.92	3.87	1.79	3.63	10.70	7.61	5.93	9.92	3.41	2.91	1.62	57.48
1979	2.43	0.44	0.65	4.52	5.94	8.66	9.75	9.42	12.81	3.62	1.66	2.92	62.82
1980	1.30	1.11	2.28	2.76	4.55	3.61	8.79	8.09	5.63	0.49	2.61	1.06	42.27
1981	0.37	1.87	1.55	0.04	1.86	6.93	7.00	13.69	8.69	1.73	0.47	0.17	44.38
1982	0.35	1.21	1.72	4.67	8.47	17.71	9.72	10.98	6.48	4.80	1.42	0.70	68.24
1983	6.10	5.84	4.09	0.95	1.01	12.04	8.01	7.00	15.87	12.20	1.78	2.67	77.56
1984	0.45	0.80	3.39	1.19	4.83	6.35	14.74	9.09	7.21	4.17	1.35	0.18	53.74
1985	1.32	0.45	1.14	2.21	2.90	4.18	10.99	3.23	3.00	4.02	1.92	1.08	36.45
1986	2.09	2.09	1.66	1.23	0.49	17.55	4.54	11.51	4.23	5.33	1.18	6.51	58.41
1987	1.01	1.74	6.45	0.04	5.84	4.29	5.12	9.84	7.59	1.76	5.13	0.11	48.91
1988	1.16	1.44	0.95	0.69	1.99	5.55	3.27	6.68	5.63	1.66	1.59	0.98	31.58
1989	0.72	0.21	1.54	6.05	0.21	9.95	10.23	5.53	8.11	4.97	0.66	1.12	49.31
1990	0.08	0.40	2.65	0.88	4.37	8.62	8.46	12.07	7.40	4.18	0.70	0.11	49.93
1991	3.74	2.32	2.69	2.45	4.83	13.99	16.88	4.25	5.78	2.24	0.71	0.12	60.01
1992	0.43	5.30	2.69	3.29	0.47	19.00	5.24	13.72	7.19	1.59	1.33	0.09	60.34
1993	5.65	1.84	1.56	3.46	1.93	4.57	6.85	8.98	11.41	5.39	0.93	0.45	53.02
1994	4.49	1.19	1.08	6.54	3.94	9.90	5.53	6.68	13.01	5.37	3.75	4.25	65.71
1995	3.67	0.39	1.14	3.59	11.04	22.09	7.69	15.66	9.23	10.32	0.34	0.41	85.59
1996	3.41	0.58	3.25	1.54	7.75	15.58	4.01	4.63	6.02	1.80	0.07	0.29	48.94
1997	2.27	1.23	5.54	1.89	2.38	8.23	6.01	7.11	5.88	1.59	6.55	7.95	56.62
1998	1.29	4.58	6.46	0.09	2.10	8.01	8.69	12.15	7.14	2.73	10.45	2.04	65.74
1999	2.95	0.02	0.55	0.38	3.40	13.21	6.18	6.66	19.58	7.73	3.57	0.43	64.66
2000	0.86	0.63	0.44	2.75	1.63	6.99	6.77	8.04	10.50	4.80	0.10	0.27	43.79
Mean	1.86	1.64	2.29	2.09	3.97	10.89	8.21	8.28	8.65	4.15	1.84	1.44	55.29

Table 5. Monthly and Mean Rainfall (inches) at Immokalee Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.61	3.13	2.48	0.97	2.12	9.82	9.90	8.59	4.60	4.68	0.77	1.41	49.07
1966	4.73	2.94	0.64	3.90	8.29	10.85	8.73	6.83	7.09	3.42	0.11	1.64	59.17
1967	2.56	3.80	0.62	0.01	0.68	19.57	5.98	6.61	5.48	7.35	0.42	2.50	55.56
1968	0.18	2.78	1.11	0.50	7.79	19.92	14.61	9.12	8.91	6.01	3.39	0.80	75.13
1969	2.82	2.42	5.35	2.39	3.69	13.17	11.29	13.09	11.19	13.57	1.25	3.81	84.04
1970	5.23	1.84	17.02	0.00	7.71	12.75	2.76	5.85	3.94	2.33	0.21	0.13	59.78
1971	1.23	1.05	0.31	0.39	3.45	11.18	5.89	5.95	7.32	3.04	0.53	0.93	41.28
1972	0.99	2.18	6.47	1.35	4.77	11.30	4.24	10.25	2.35	0.52	5.99	1.13	51.54
1973	3.07	2.85	4.72	1.40	1.28	7.96	9.22	16.01	5.19	1.28	0.36	1.41	54.74
1974	0.24	1.68	1.69	1.31	7.02	16.78	8.42	8.46	7.40	0.46	2.28	0.37	56.11
1975	0.15	0.61	1.04	4.35	4.76	13.97	6.00	5.66	10.44	2.83	0.62	0.36	50.79
1976	0.43	1.16	1.81	2.74	6.31	6.75	5.97	5.77	8.57	2.02	1.73	1.84	45.11
1977	4.33	1.15	0.06	0.20	2.81	6.01	6.89	6.06	6.95	1.35	4.87	2.47	43.14
1978	2.73	1.81	3.69	2.65	3.07	8.75	8.36	6.93	4.70	2.10	0.21	3.62	48.61
1979	4.87	0.52	2.86	4.27	8.68	1.87	5.78	5.04	14.29	1.34	2.80	5.02	57.33
1980	4.35	1.36	3.22	4.05	3.61	1.74	7.80	5.62	5.60	0.65	3.10	0.79	41.89
1981	0.54	1.95	1.34	0.32	0.76	7.51	6.21	10.66	5.15	1.80	1.86	0.25	38.35
1982	0.70	1.75	3.05	3.05	12.46	11.86	11.37	7.05	6.14	4.86	0.58	3.27	66.15
1983	3.81	11.37	5.22	1.57	0.48	8.23	8.27	7.69	7.24	3.17	1.89	5.65	64.59
1984	0.23	3.78	5.14	0.91	9.28	4.04	7.26	9.06	11.25	0.91	6.90	0.04	58.80
1985	0.47	0.37	1.79	4.44	0.35	4.25	6.80	5.28	7.12	3.21	1.44	0.84	36.35
1986	1.77	3.86	4.44	0.34	0.65	10.60	4.55	9.30	5.90	3.01	0.14	2.89	47.44
1987	3.25	3.39	8.05	0.07	8.30	3.49	6.09	4.51	5.85	4.97	9.12	0.14	57.22
1988	1.44	1.89	2.83	0.35	4.68	1.76	7.77	11.02	2.54	0.07	1.60	0.68	36.62
1989	1.28	0.40	4.20	6.48	1.06	10.84	10.69	5.31	3.50	2.00	0.43	1.94	48.12
1990	0.89	2.60	1.23	1.93	4.09	4.73	9.93	5.94	4.57	3.04	1.02	0.03	40.00
1991	8.12	1.81	3.02	2.01	8.87	8.88	9.84	9.65	2.73	5.30	0.91	0.10	61.25
1992	2.01	2.78	2.70	6.50	1.17	17.01	3.55	5.63	2.53	0.95	2.20	0.22	47.24
1993	8.18	3.09	4.01	3.32	2.53	5.69	6.03	5.20	11.56	2.82	0.70	1.28	54.41
1994	3.85	3.49	2.02	2.07	3.23	8.05	6.00	7.84	10.70	3.13	3.91	6.04	60.33
1995	3.21	1.25	1.02	3.05	1.03	11.32	10.48	15.40	12.27	17.11	0.91	0.70	77.75
1996	1.52	1.14	3.10	1.48	5.18	6.70	2.21	5.58	5.23	4.87	0.14	0.28	37.41
1997	1.48	0.34	2.85	6.11	5.45	3.72	12.99	5.44	6.15	0.52	2.38	7.06	54.50
1998	2.58	7.20	5.28	1.13	3.18	2.66	6.60	6.85	5.37	2.07	6.57	1.54	51.03
1999	1.56	0.49	0.32	1.23	7.44	20.69	3.83	12.03	12.89	4.11	1.41	0.48	66.46
2000	1.05	0.03	2.15	1.16	0.04	8.56	8.39	8.44	4.63	2.66	0.24	0.87	38.23
Mean	2.40	2.34	3.25	2.17	4.34	9.25	7.52	7.88	6.87	3.43	2.03	1.74	53.21

Table 6. Monthly and Mean Rainfall (inches) at Naples Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.64	2.84	0.74	1.96	2.53	8.17	7.72	10.11	4.61	4.95	1.07	0.93	46.27
1966	3.02	2.30	0.26	4.32	2.82	12.51	7.34	10.87	4.00	3.72	0.18	0.70	52.04
1967	4.17	4.40	1.66	0.00	0.84	4.40	7.26	12.29	9.08	4.40	0.65	3.51	52.66
1968	0.19	3.04	0.54	0.24	2.93	14.25	14.15	9.28	8.78	5.04	1.49	0.54	60.47
1969	2.48	1.18	2.83	1.66	5.91	8.41	13.86	9.41	7.24	8.70	2.17	2.10	65.95
1970	2.50	1.97	13.56	0.00	4.05	6.69	5.63	4.56	11.75	3.58	0.43	0.04	54.76
1971	1.18	1.10	0.27	0.14	1.05	5.38	6.44	9.95	16.62	5.76	1.09	0.21	49.19
1972	0.68	4.55	6.88	2.86	6.63	13.67	4.06	12.06	4.96	1.65	3.69	1.12	62.81
1973	1.66	1.21	1.21	0.86	1.11	6.28	7.91	13.38	9.37	0.72	0.80	1.58	46.10
1974	0.12	0.41	0.00	0.03	6.82	13.04	7.19	5.82	8.13	0.02	1.99	1.14	44.71
1975	0.11	0.40	0.52	0.77	4.20	5.18	9.82	3.29	9.13	3.87	0.58	0.20	38.08
1976	0.70	1.62	0.22	1.27	11.89	14.68	7.78	6.54	6.34	3.21	1.11	1.70	57.07
1977	3.03	1.24	0.05	0.20	4.73	14.20	5.61	7.48	7.44	0.39	2.98	3.02	50.37
1978	2.48	3.51	5.29	2.54	4.58	6.48	6.98	12.04	6.40	0.99	0.18	3.77	55.25
1979	4.88	1.57	1.27	6.34	6.51	2.87	7.34	4.78	11.35	5.45	1.08	3.59	57.03
1980	3.72	1.49	2.06	2.47	3.04	3.45	10.95	10.30	10.86	1.55	2.87	0.77	53.52
1981	0.68	5.65	1.54	0.94	0.98	9.10	8.37	13.02	3.81	0.34	1.18	0.35	45.96
1982	0.63	2.18	2.34	6.77	6.54	14.09	8.06	7.84	8.47	3.22	1.95	2.82	64.90
1983	3.31	7.99	6.17	2.23	0.73	10.75	6.09	7.07	9.24	3.95	6.08	2.56	66.17
1984	0.49	2.41	4.41	0.87	5.18	7.82	7.34	5.23	9.83	0.56	0.87	0.49	45.48
1985	0.86	0.90	1.55	2.56	0.64	6.95	21.45	5.19	9.77	5.80	2.66	0.84	59.17
1986	1.75	1.94	2.41	0.80	4.98	11.04	3.47	7.83	7.41	4.38	1.78	3.92	51.72
1987	2.02	2.19	8.32	0.14	8.34	7.11	6.86	5.93	3.61	7.06	6.60	0.18	58.36
1988	1.08	0.99	2.57	0.82	2.12	2.40	8.81	8.09	6.25	0.84	1.72	0.35	36.03
1989	0.84	0.09	0.99	6.93	0.42	12.74	10.01	8.54	10.45	4.56	0.56	2.37	58.50
1990	0.16	2.21	2.08	2.25	4.94	8.53	5.74	3.60	8.70	5.13	1.06	0.09	44.49
1991	9.35	2.11	3.26	2.94	10.77	6.10	14.50	8.76	5.31	4.51	1.28	0.39	69.28
1992	0.59	3.69	2.72	2.55	0.90	13.13	7.47	9.19	9.04	0.69	0.58	0.05	50.59
1993	7.82	3.93	2.13	2.25	2.79	6.71	8.71	10.54	3.31	6.57	0.52	0.59	55.87
1994	1.63	1.67	1.19	1.21	0.93	10.80	11.28	7.15	9.46	3.77	2.54	3.58	55.21
1995	4.35	1.74	0.75	3.42	1.71	10.38	7.82	14.79	10.34	15.76	0.52	0.72	72.31
1996	2.14	0.01	2.26	1.46	5.53	2.60	3.46	5.56	2.26	7.40	0.26	0.30	33.25
1997	1.04	0.36	4.02	7.90	4.33	8.52	5.61	4.23	2.97	2.21	3.74	6.28	51.23
1998	1.52	6.09	2.52	0.57	5.63	5.66	7.67	6.87	11.39	3.05	6.66	1.86	59.50
1999	2.12	1.45	0.68	0.46	3.71	8.86	8.08	7.83	14.16	1.93	2.27	0.66	52.20
2000	0.95	0.05	1.63	1.34	1.58	7.00	7.15	12.85	9.80	0.79	0.31	0.36	43.82
Mean	2.08	2.24	2.52	2.06	3.96	8.61	8.28	8.40	8.10	3.79	1.82	1.49	53.34

Table 7. Monthly and Mean Rainfall (inches) at Moore Haven Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.32	3.59	2.58	1.76	1.65	10.10	5.95	3.65	5.07	9.34	0.59	1.89	46.49
1966	5.78	3.67	0.32	4.70	6.50	11.94	9.60	10.85	6.94	2.62	0.10	0.39	63.42
1967	0.84	1.69	0.20	0.14	1.55	11.54	5.60	4.27	7.54	3.37	0.08	1.32	38.14
1968	0.58	2.11	1.03	0.82	8.07	10.18	9.34	4.86	6.81	3.21	2.25	0.19	49.46
1969	1.76	2.28	6.19	1.25	4.39	10.43	4.63	11.18	8.25	11.63	1.46	3.82	67.26
1970	4.05	2.40	12.63	0.02	2.18	8.39	6.50	7.35	2.06	4.12	0.13	0.30	50.12
1971	0.25	0.51	0.36	0.14	1.50	15.47	6.93	8.74	7.18	6.25	1.33	1.20	49.86
1972	0.56	1.55	6.97	2.76	7.13	10.50	3.16	9.27	1.03	0.43	2.31	1.39	47.07
1973	2.42	2.73	3.34	1.02	6.01	9.78	8.97	7.49	8.43	1.10	0.03	1.52	52.85
1974	0.14	1.36	0.08	0.97	3.93	14.57	19.16	7.92	6.41	1.24	2.19	1.71	59.67
1975	0.20	1.95	0.74	1.31	3.56	5.30	7.11	2.46	9.86	4.49	0.27	0.49	37.74
1976	0.65	1.41	1.59	1.81	5.87	3.22	10.64	12.33	6.54	0.80	1.94	1.92	48.73
1977	5.11	1.38	1.12	0.20	5.09	4.27	6.25	6.10	6.27	0.46	2.05	4.74	43.04
1978	1.78	1.39	2.68	2.06	8.95	5.59	9.28	2.79	7.11	2.32	2.13	2.60	48.69
1979	5.84	0.23	2.30	3.64	7.41	1.52	1.93	6.61	18.40	2.06	1.83	1.96	53.73
1980	2.80	1.12	2.58	5.29	2.23	5.09	6.85	7.67	6.33	1.52	2.04	0.64	44.17
1981	0.87	1.52	1.28	0.38	2.09	2.97	4.36	9.42	4.54	0.23	1.27	0.15	29.09
1982	0.59	2.81	5.59	2.57	11.18	11.07	10.00	3.38	5.28	5.45	0.26	0.80	58.99
1983	4.22	8.04	6.26	1.75	0.67	8.17	4.79	3.44	3.36	4.29	1.64	2.39	49.02
1984	0.33	4.06	5.22	2.91	6.75	5.06	11.79	5.45	3.14	0.46	2.95	0.09	48.20
1985	0.60	0.41	2.11	6.60	1.22	4.75	8.58	5.42	6.09	2.33	1.41	3.09	42.60
1986	2.34	0.99	6.48	0.24	1.59	12.89	3.81	8.15	6.08	3.48	0.44	3.55	50.04
1987	3.65	1.93	7.17	0.00	1.33	3.48	2.68	3.92	11.06	6.06	8.53	0.60	50.41
1988	1.44	2.57	2.92	1.38	2.74	2.88	6.66	6.76	1.62	0.80	4.17	0.72	34.67
1989	1.62	0.10	2.76	7.10	1.70	7.42	7.93	3.05	8.68	2.88	0.77	2.19	46.20
1990	0.11	2.79	2.22	2.37	1.63	5.16	9.08	9.21	3.01	3.02	0.88	0.38	39.85
1991	5.57	0.90	4.56	4.49	6.69	8.07	9.34	8.68	3.05	4.61	0.95	0.33	57.23
1992	1.04	3.73	3.65	2.89	0.71	20.77	3.57	8.32	1.40	1.31	1.62	0.68	49.71
1993	4.71	2.01	2.39	2.15	1.74	3.98	4.99	4.93	5.48	5.61	1.01	1.04	40.04
1994	3.86	3.12	3.55	2.23	3.96	6.92	5.63	3.63	12.34	2.78	3.79	4.99	56.81
1995	3.48	2.89	5.52	3.47	2.65	10.18	16.18	8.39	4.81	10.69	0.40	0.35	69.02
1996	3.04	0.87	3.00	1.25	5.20	7.58	4.42	5.57	1.00	3.19	0.38	0.73	36.23
1997	1.18	1.05	1.88	6.02	3.20	4.11	4.41	11.04	8.19	0.38	3.26	5.15	49.87
1998	1.02	7.59	4.59	0.16	1.66	4.50	2.88	14.32	8.43	2.18	4.15	1.02	52.50
1999	2.46	0.24	0.31	2.61	3.76	10.91	3.49	8.66	8.08	3.77	1.20	1.26	46.76
2000	0.79	0.19	1.87	3.22	0.27	3.54	5.69	3.74	11.72	1.44	0.50	0.55	33.53
Mean	2.11	2.14	3.28	2.27	3.80	7.84	7.00	6.92	6.43	3.33	1.68	1.56	48.37

Table 8. Monthly and Mean Rainfall (inches) at Clewiston Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.44	5.33	2.41	2.92	1.61	12.32	4.82	3.88	5.96	8.12	0.46	1.13	49.40
1966	3.59	2.39	0.34	3.34	5.49	13.95	5.22	12.52	6.02	4.92	0.22	0.49	58.50
1967	0.86	3.70	1.38	0.02	0.35	11.09	6.11	7.06	3.77	3.84	0.12	1.15	39.45
1968	0.27	2.47	0.75	0.53	7.41	10.67	10.97	2.94	5.26	4.20	2.31	0.13	47.90
1969	2.56	1.86	6.59	0.83	5.27	5.29	4.35	8.28	4.66	9.99	1.45	2.24	53.35
1970	2.47	1.89	14.16	0.00	3.06	5.51	5.75	7.38	2.78	3.20	0.03	0.25	46.48
1971	0.45	1.15	0.37	0.13	4.15	5.14	10.96	5.12	4.87	2.67	3.02	0.45	38.47
1972	1.04	1.31	6.25	4.07	5.36	9.00	6.76	8.17	0.90	1.32	2.96	1.32	48.45
1973	1.90	2.76	2.68	0.83	3.90	5.41	8.00	8.90	5.39	1.04	0.21	1.59	42.62
1974	0.17	0.24	0.37	0.89	2.53	16.52	10.72	9.16	5.29	1.91	1.99	1.09	50.87
1975	0.46	2.19	0.55	2.19	7.09	5.80	8.17	4.21	7.60	1.80	0.22	0.30	40.59
1976	0.41	1.41	0.01	1.55	9.12	6.08	3.97	3.33	3.18	1.30	2.29	1.92	34.56
1977	3.24	1.59	2.37	0.24	8.96	5.70	5.39	7.86	8.40	1.00	9.80	4.06	58.62
1978	2.29	1.26	2.44	1.66	9.42	5.01	6.69	10.01	3.97	2.16	3.06	2.20	50.18
1979	5.36	0.16	0.84	3.72	4.14	2.07	3.00	5.38	15.89	1.60	5.74	1.68	49.57
1980	6.23	1.19	2.44	4.70	3.56	5.91	4.68	6.17	3.10	1.42	2.85	0.80	43.05
1981	0.68	1.53	2.17	0.20	2.21	4.59	3.10	11.15	3.31	1.04	2.09	0.10	32.18
1982	0.81	2.46	2.72	1.37	17.03	11.02	6.79	4.78	7.19	1.92	0.67	1.13	57.90
1983	3.97	8.09	5.54	1.16	0.93	10.58	8.30	4.23	3.83	6.69	1.67	3.08	58.06
1984	0.21	3.63	5.61	5.92	8.02	3.10	12.26	3.97	6.40	0.24	1.25	0.05	50.66
1985	0.52	0.36	2.74	2.56	4.74	4.39	10.06	7.47	7.71	5.07	1.50	2.06	49.19
1986	3.21	0.82	5.10	0.25	1.99	12.87	7.03	6.65	5.01	2.72	0.56	3.81	50.03
1987	3.04	1.67	5.11	0.03	0.86	2.47	3.15	7.13	4.23	5.17	9.86	0.32	43.04
1988	1.57	2.05	2.56	0.97	3.19	8.86	10.44	13.72	1.96	0.37	2.37	0.54	48.60
1989	1.12	0.01	3.10	8.45	2.56	6.82	6.89	8.01	8.79	2.86	0.72	1.80	51.14
1990	0.25	2.19	2.30	1.06	4.55	6.38	4.21	6.54	3.84	3.05	0.43	0.92	35.71
1991	5.30	2.35	3.68	4.99	5.72	8.43	7.96	6.88	0.58	2.36	2.62	0.03	50.90
1992	1.12	4.94	3.97	2.80	1.13	13.41	4.26	7.20	2.46	0.37	1.59	0.50	43.75
1993	5.86	2.62	3.89	1.55	1.58	5.33	8.57	4.26	3.78	7.31	1.28	0.76	46.80
1994	3.37	2.86	2.09	1.13	4.85	6.14	5.25	4.83	8.63	3.60	4.16	5.90	52.81
1995	3.14	2.88	2.75	2.66	4.94	8.98	14.36	10.67	6.54	15.91	1.05	0.87	74.74
1996	3.39	0.83	4.61	1.50	8.68	11.00	8.67	6.62	3.88	5.82	0.17	0.97	56.14
1997	1.38	1.22	0.96	5.72	2.36	8.12	5.21	5.46	8.87	1.81	3.84	7.03	51.99
1998	2.60	8.15	5.62	1.83	1.88	2.24	5.96	9.72	11.42	2.09	0.21	1.09	52.83
1999	2.83	0.22	0.56	0.99	5.95	23.59	13.01	8.43	10.44	9.17	1.02	1.08	77.27
2000	8.12	0.00	1.63	3.17	1.38	6.75	5.89	5.06	9.65	1.82	0.36	0.53	44.37
Mean	2.34	2.22	3.07	2.11	4.61	8.07	7.14	7.03	5.71	3.61	2.06	1.48	49.45

Table 9. Monthly and Mean Rainfall (inches) at Devils Garden Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.71	3.50	4.26	1.15	2.67	12.37	11.19	9.13	5.77	6.38	1.02	1.23	59.38
1966	4.82	2.50	0.58	4.01	4.33	17.86	9.19	9.12	3.88	4.38	0.14	0.32	61.12
1967	1.48	4.68	0.73	0.05	0.71	14.95	9.20	2.94	9.10	3.20	0.19	1.77	49.01
1968	0.61	3.53	1.49	0.85	8.50	12.98	12.07	4.74	6.46	4.11	2.63	0.18	58.15
1969	2.14	1.98	5.30	1.37	2.57	15.54	8.75	5.68	3.29	10.24	1.12	3.25	61.22
1970	4.31	1.16	14.10	0.00	5.54	5.97	7.29	4.91	3.81	6.85	0.00	0.31	54.25
1971	0.25	1.35	0.21	0.25	4.40	10.42	6.51	6.58	7.00	4.70	1.39	0.76	43.81
1972	0.97	2.12	6.67	2.53	6.10	10.04	3.79	7.26	2.16	2.99	3.13	1.19	48.95
1973	2.62	1.52	1.58	0.61	6.35	5.66	7.99	5.42	6.38	1.32	0.20	1.86	41.51
1974	0.17	1.09	0.58	1.27	5.62	16.24	12.34	8.35	6.57	0.88	2.38	1.40	56.89
1975	0.24	1.12	1.14	1.51	4.49	10.46	8.29	4.54	9.65	4.93	0.52	0.43	47.33
1976	0.90	1.36	1.47	1.24	11.90	8.28	4.76	5.73	8.11	1.67	1.52	2.03	48.97
1977	3.39	1.10	0.39	0.16	5.10	6.19	9.20	12.15	10.68	0.68	3.43	3.25	55.74
1978	2.35	1.18	2.72	1.44	6.17	7.84	9.42	6.71	6.08	3.97	1.83	3.67	53.37
1979	3.70	0.61	1.44	3.88	7.20	3.83	4.69	9.68	14.30	1.31	5.27	2.15	58.05
1980	5.91	2.25	2.88	6.17	2.69	5.13	8.06	4.00	7.58	0.54	2.69	0.86	48.77
1981	0.48	1.94	1.82	0.25	1.55	8.51	3.25	9.48	6.02	0.22	5.50	0.13	39.16
1982	0.57	2.51	2.03	3.49	14.70	18.87	9.44	7.32	7.24	5.30	1.05	0.48	73.01
1983	3.69	8.68	5.65	2.07	0.52	9.88	4.02	8.31	4.98	4.89	2.17	3.48	58.33
1984	0.17	4.31	4.01	2.91	6.13	6.49	12.13	6.02	9.96	1.12	3.84	0.00	57.09
1985	0.72	0.60	1.48	4.41	2.08	9.95	8.91	3.72	6.15	2.54	1.00	2.01	43.58
1986	3.30	0.72	7.06	0.30	3.02	18.10	5.50	14.77	3.26	5.24	0.81	3.65	65.73
1987	4.80	2.50	7.36	0.00	2.10	3.71	3.41	6.80	9.04	5.30	9.40	0.31	54.73
1988	1.67	2.80	3.50	2.17	1.64	4.40	8.84	12.40	1.05	1.00	7.57	0.75	47.78
1989	0.95	0.00	4.58	4.90	5.29	9.40	5.32	8.17	7.74	1.39	0.50	1.90	50.15
1990	0.78	1.80	2.30	1.69	4.34	5.61	6.97	9.68	2.64	3.30	0.40	0.06	39.57
1991	6.90	1.16	4.16	4.10	8.05	11.31	11.22	5.85	3.70	3.12	1.32	0.06	60.94
1992	1.35	3.57	2.78	2.35	1.60	10.44	7.95	13.16	5.30	1.00	2.26	1.09	52.86
1993	4.60	1.20	3.28	2.60	2.13	4.27	12.95	7.81	8.08	9.34	2.40	1.20	59.87
1994	2.03	4.56	1.94	5.50	3.77	6.98	8.81	7.41	9.71	3.74	4.00	6.65	65.11
1995	4.94	1.10	2.20	3.47	1.62	9.40	11.70	8.49	6.23	13.57	0.46	0.63	63.82
1996	3.27	1.04	3.62	0.80	6.73	7.21	4.92	8.30	4.94	5.40	0.55	0.15	46.92
1997	1.23	2.30	2.57	6.29	2.65	8.28	10.65	6.76	6.11	1.00	3.24	6.53	57.61
1998	1.60	8.78	4.77	1.19	2.41	7.22	8.72	13.51	8.82	0.72	7.45	0.15	65.35
1999	2.83	0.21	0.62	4.75	4.33	14.67	4.38	9.27	9.66	7.39	2.23	0.57	60.90
2000	2.50	0.96	0.95	4.23	3.97	5.05	5.23	3.67	6.51	2.55	0.18	0.55	36.33
Mean	2.30	2.27	3.12	2.33	4.53	9.54	7.97	7.72	6.61	3.79	2.33	1.53	54.04

Table 10. Monthly and Mean Rainfall (inches) at LaBelle Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.57	2.81	4.02	3.40	1.84	17.09	9.69	10.34	7.28	5.40	0.53	1.09	64.06
1966	3.05	2.91	0.84	5.30	7.78	16.30	6.20	8.24	15.07	3.04	0.14	0.96	69.83
1967	2.98	2.93	0.33	0.13	1.74	9.19	9.71	8.02	3.42	5.28	0.42	1.58	45.73
1968	0.10	2.18	2.22	0.46	9.12	11.34	14.75	7.62	4.29	4.82	2.84	0.12	59.87
1969	1.75	1.77	7.42	0.78	4.76	11.13	5.96	8.69	3.69	7.71	0.53	3.46	57.65
1970	4.92	1.78	14.07	0.02	5.19	9.55	5.34	6.06	4.63	3.42	0.18	0.26	55.42
1971	0.74	1.11	0.39	0.38	3.28	11.00	6.55	6.90	7.86	4.56	1.03	0.73	44.54
1972	0.98	2.33	6.32	1.93	6.08	11.16	4.56	10.44	2.65	1.42	4.39	1.42	53.67
1973	3.34	2.44	3.61	1.27	2.64	7.72	9.47	12.60	6.32	1.23	0.22	1.88	52.73
1974	0.18	1.17	0.70	1.23	5.97	17.25	11.29	8.34	6.65	0.59	2.24	1.15	56.76
1975	0.20	0.75	0.43	2.35	1.84	6.87	8.03	7.04	3.67	5.79	0.29	0.50	37.74
1976	0.17	1.30	3.16	0.99	8.04	4.68	9.33	4.29	7.71	2.15	2.54	1.75	46.11
1977	6.05	0.51	0.12	0.14	5.32	4.56	9.74	9.82	6.93	0.67	2.38	3.87	50.12
1978	2.47	1.97	3.30	0.95	5.69	6.90	10.05	4.62	9.15	0.84	1.74	3.25	50.93
1979	5.64	0.46	1.90	4.13	6.99	5.70	3.38	7.16	15.86	3.30	2.06	3.18	59.77
1980	2.19	1.81	2.76	3.47	3.81	4.12	9.26	9.87	5.42	1.36	4.50	0.78	49.33
1981	0.97	1.79	1.51	0.16	0.96	7.75	5.66	11.30	4.78	0.36	1.84	0.55	37.63
1982	0.75	1.14	2.76	2.40	9.19	11.70	5.17	6.87	5.36	1.68	0.22	1.12	48.34
1983	5.59	11.81	8.42	2.15	0.64	15.22	3.49	4.62	6.87	3.67	1.89	2.65	67.03
1984	0.47	2.52	5.31	2.26	5.82	10.74	13.04	3.18	5.69	1.17	5.18	0.59	55.95
1985	0.54	0.61	2.22	2.58	2.50	8.12	5.72	7.93	6.84	2.38	1.62	1.29	42.37
1986	3.24	0.91	5.26	0.27	1.14	11.75	5.79	14.06	6.29	3.38	0.38	4.57	57.04
1987	3.52	2.28	11.03	0.07	4.89	2.75	11.58	3.16	8.33	9.12	9.04	0.53	66.30
1988	2.70	1.84	4.40	1.42	3.21	3.80	6.21	8.80	1.66	0.82	6.48	1.83	43.17
1989	1.96	0.68	4.56	5.82	1.77	12.86	10.14	10.73	8.33	8.92	0.75	1.81	68.33
1990	0.15	3.18	1.95	2.45	1.79	12.36	8.99	11.61	3.39	2.76	0.72	0.18	49.53
1991	6.60	1.26	3.26	5.07	8.62	8.22	17.22	13.25	11.69	3.99	2.03	0.06	81.28
1992	1.46	4.35	3.27	3.81	1.35	15.34	5.61	7.32	5.51	1.24	0.72	0.90	50.88
1993	5.91	1.63	4.47	2.02	1.67	9.75	9.40	10.19	9.02	9.11	1.81	1.80	66.77
1994	3.46	4.46	2.60	4.34	3.36	12.06	6.42	12.22	13.65	6.69	5.92	4.34	79.52
1995	5.92	2.48	1.45	3.22	2.27	17.15	17.90	11.94	8.36	16.40	0.94	0.27	88.30
1996	4.65	1.64	2.99	1.42	6.49	13.59	5.87	9.47	4.28	5.99	1.12	0.19	57.71
1997	1.34	1.87	1.80	11.51	4.68	12.36	15.44	6.59	8.01	2.74	7.56	9.56	83.47
1998	3.75	8.41	6.53	1.48	4.31	3.69	15.60	9.52	10.33	2.78	5.01	0.16	71.58
1999	5.36	0.90	1.21	1.75	5.49	19.07	4.30	9.59	9.81	2.85	0.90	1.17	62.41
2000	1.38	0.50	1.62	3.43	1.81	6.13	6.74	9.56	13.93	1.88	0.26	0.59	47.83
Mean	2.64	2.29	3.56	2.35	4.22	10.25	8.71	8.67	7.30	3.88	2.23	1.67	57.77

Table 11. Monthly and Mean Rainfall (inches) at Ft. Myers Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.97	2.99	2.93	2.39	2.36	7.78	9.09	6.16	3.94	4.82	0.28	0.85	44.56
1966	3.88	1.06	0.33	4.04	1.95	15.86	6.04	8.10	3.95	2.14	0.18	0.28	47.81
1967	1.15	2.15	0.82	0.00	1.47	8.72	6.82	14.72	6.80	3.08	0.92	2.91	49.57
1968	0.40	2.33	0.65	0.45	7.18	15.71	11.19	12.22	8.92	7.99	2.86	0.22	70.11
1969	1.44	2.87	4.78	0.47	4.88	10.29	7.20	8.16	16.67	11.31	0.22	3.95	72.25
1970	4.55	2.20	18.58	0.00	6.22	8.12	4.01	4.82	9.06	1.86	0.46	0.23	60.12
1971	0.85	1.55	0.70	0.70	3.77	7.55	8.20	8.89	9.21	6.55	0.62	0.30	48.89
1972	0.95	2.14	4.75	0.71	5.20	7.86	8.31	19.02	2.22	2.28	3.89	1.43	58.76
1973	3.31	2.23	3.89	1.71	1.07	3.99	10.90	9.59	8.39	0.20	0.10	1.72	47.10
1974	0.36	0.81	0.03	0.11	3.20	21.03	13.10	7.73	4.84	0.19	1.01	0.89	53.30
1975	0.26	0.27	1.47	0.61	3.61	6.74	10.61	7.39	12.92	2.94	0.49	0.53	47.84
1976	0.21	1.20	0.91	0.90	4.00	10.22	6.73	8.78	8.21	1.96	2.03	1.41	46.56
1977	3.69	0.15	0.09	0.76	6.72	8.58	9.23	11.28	9.21	0.61	1.76	2.74	54.82
1978	2.48	3.36	3.46	2.35	2.09	6.59	10.62	10.73	5.66	1.68	0.04	4.35	53.41
1979	7.45	1.94	0.43	4.80	5.05	9.12	5.22	12.52	14.28	0.39	0.46	5.12	66.79
1980	2.47	1.07	4.25	1.52	8.73	4.73	6.74	10.22	4.73	1.65	3.15	0.56	49.81
1981	0.80	1.65	1.29	0.08	3.09	11.79	8.27	17.10	6.70	0.44	0.71	0.73	52.65
1982	0.81	3.34	4.06	3.97	4.56	15.01	10.79	10.60	9.28	4.95	1.11	0.30	68.78
1983	4.50	10.82	7.95	1.34	0.60	19.51	5.15	6.68	9.72	4.39	3.72	2.95	77.33
1984	0.15	3.15	6.39	1.28	2.78	8.75	7.97	5.79	8.30	0.65	0.73	0.02	45.95
1985	0.71	0.44	2.06	1.45	1.36	3.92	9.00	7.82	11.69	7.16	2.20	0.67	48.48
1986	0.90	1.01	3.59	0.53	4.01	14.99	6.64	11.64	5.54	4.83	0.30	4.56	58.54
1987	2.29	2.86	5.86	0.14	3.95	7.66	12.89	7.57	7.61	5.10	8.06	0.49	64.48
1988	2.19	1.47	2.44	1.58	1.56	7.23	5.08	9.92	1.93	0.40	2.84	0.26	36.90
1989	1.65	0.36	2.88	2.33	8.07	7.89	8.19	7.78	4.99	2.05	0.90	2.16	49.25
1990	0.05	3.37	1.88	0.45	3.27	7.06	6.62	13.28	8.62	2.28	0.01	0.25	47.13
1991	7.95	0.72	2.34	5.02	8.75	11.93	15.95	5.36	7.98	4.05	0.34	0.31	70.71
1992	1.83	3.89	4.58	2.08	0.97	19.01	7.10	7.45	3.82	1.24	1.20	0.85	54.01
1993	5.35	3.34	3.62	2.41	2.59	6.63	5.97	6.75	8.49	7.00	0.78	0.79	53.73
1994	3.15	2.18	1.22	5.65	2.15	4.75	9.02	10.10	7.74	2.89	2.49	3.83	55.18
1995	3.57	1.41	0.89	4.91	2.11	13.96	12.86	14.67	9.95	14.10	1.10	0.79	80.31
1996	2.35	0.85	3.16	1.98	6.45	8.43	4.43	5.90	5.08	7.11	0.59	0.63	46.96
1997	1.34	1.06	2.63	5.80	4.55	6.34	8.35	4.69	7.85	1.13	3.68	7.64	55.04
1998	2.59	6.73	5.40	1.22	2.73	6.15	9.86	8.84	13.62	0.57	7.58	1.14	66.44
1999	2.34	0.19	0.85	0.68	5.59	11.19	8.26	9.23	8.30	1.79	1.53	1.66	51.61
2000	1.27	0.11	3.39	1.91	0.92	8.14	9.36	8.59	12.02	1.78	0.00	0.68	48.15
Mean	2.23	2.15	3.18	1.84	3.82	9.81	8.49	9.45	8.01	3.43	1.62	1.62	55.65

FREQUENCY ANALYSIS

1-in-10 Year Drought Event

Water supply needs of existing and future reasonable-beneficial uses are estimated based upon demand requirements during a 1-in-10 year drought event (Section 373.0361, (2)(a)1 F.S.). A 1-in-10 year drought is a drought of such intensity that it is expected to have a return frequency of once in 10 years. This means that there is only a 10 percent chance that such a small amount of rain will fall in any given year.

Statistical Method

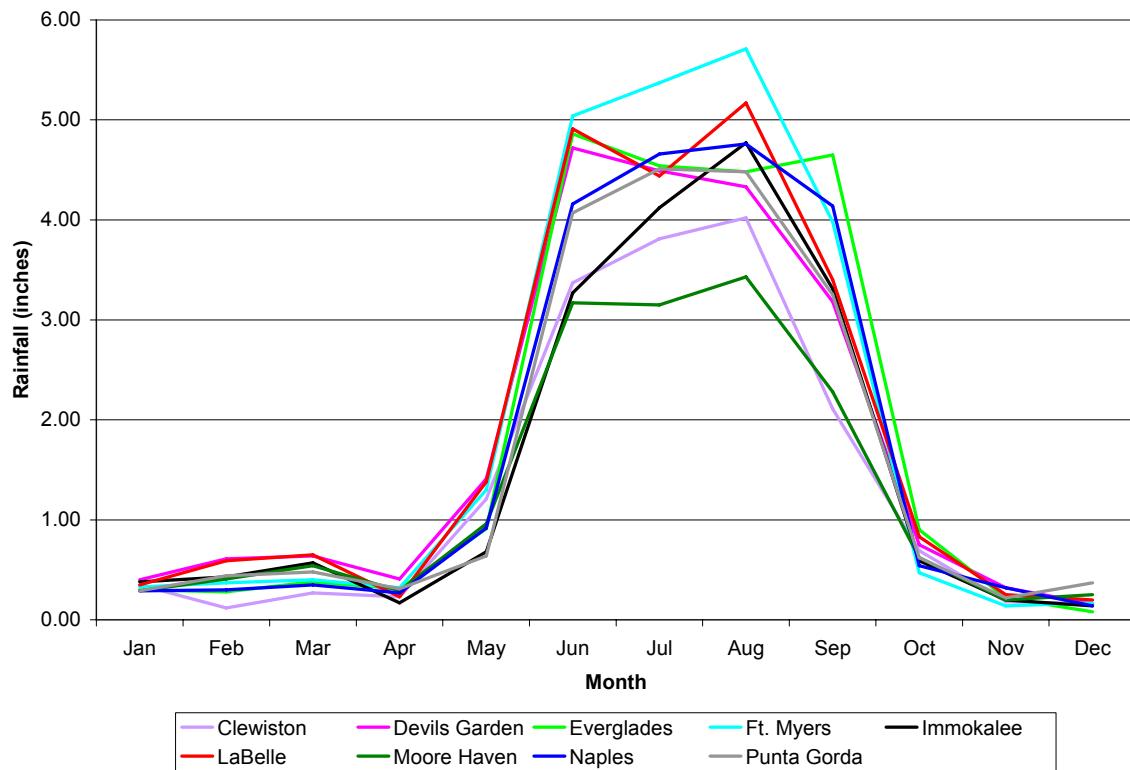
Because of correlations between rainfall amounts in different months, the sum of the 12 monthly 1-in-10 rainfall events will not equal the annual 1-in-10 rainfall event; in almost all cases a 1-in-10 annual drought will be less severe (have more rainfall) than 12 successive monthly 1-in-10 rainfall droughts. The sum of the monthly 1-in-10 drought rainfalls in all cases was less than the annual 1-in-10 drought rainfall.

Attempts to reconcile these 1-in-10 concepts depend upon the assumptions that one makes with respect to the starting month and patterns of serial correlation in rainfall. Based on the results of Abtew and Ali, the gamma distribution was used to estimate 1-in-10 drought levels of rainfall.

For more information on the use of the gamma distribution in engineering statistical analysis, see the Engineering Statistics Handbook, Section 1.3.6.6.11 available from: <http://www.itl.nist.gov/div898/handbook/eda/section3/eda366b.htm>.

Maximum likelihood estimates of annual and monthly 1-in-10 drought rainfalls based on the two-parameter gamma distribution were conducted using Number Cruncher Statistical™ software. This method consists of finding the values of the distribution parameters that maximize the log-likelihood of the data values. These values provide a high degree of probability that the current set of data values will occur. For a discussion of maximum likelihood estimation, see *Maximum Likelihood Estimation* by S. Purcell of the Statistical Genetics Group at Kings College, London.

Figure 3 shows the statistical 1-in-10 year drought event plots for the rainfall stations and **Table 12** lists the rainfall values for 1-in-10 year drought events.

**Figure 3.** Statistical 1-in-10 Year Drought Event for Rainfall Stations in the LWC Planning Area.**Table 12.** Statistical 1-in-10 Year Rainfall (in inches) for Stations in the LWC Planning Area.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum	Annual
Clewiston	0.35	0.12	0.27	0.23	1.21	3.37	3.81	4.02	2.11	0.69	0.18	0.16	16.52	38.33
Devils Garden	0.40	0.61	0.64	0.41	1.41	4.72	4.49	4.33	3.18	0.75	0.32	0.16	21.42	43.27
Everglades	0.30	0.28	0.38	0.31	0.91	4.86	4.54	4.48	4.65	0.90	0.22	0.08	21.91	41.21
Ft. Myers	0.33	0.37	0.40	0.32	1.30	5.04	5.37	5.71	3.98	0.47	0.14	0.17	23.60	43.59
Immokalee	0.38	0.43	0.57	0.17	0.68	3.27	4.12	4.77	3.31	0.59	0.20	0.14	18.63	39.31
LaBelle	0.35	0.59	0.65	0.23	1.38	4.91	4.44	5.17	3.40	0.83	0.25	0.20	22.40	42.74
Moore Haven	0.29	0.41	0.54	0.29	0.96	3.17	3.15	3.43	2.28	0.62	0.20	0.25	15.59	37.17
Naples	0.29	0.30	0.35	0.27	0.92	4.16	4.66	4.76	4.14	0.54	0.32	0.14	20.85	34.96
Punta Gorda	0.29	0.44	0.48	0.31	0.64	4.07	4.51	4.48	3.25	0.62	0.22	0.37	19.68	39.61

Note: Based on Gamma Distribution.

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